REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

In the specification, paragraphs beginning on page 2, line 19, page 3, line 20, page 6, line 1, page 7, line 1, have been amended to correct minor editorial problems.

New claims 5-8 have been added.

Claims 1 and 4 stand rejected under 35 USC 103 (a) as being obvious in view of U.S. Patent No. 4,711,573 to Wijntjes et al. (hereinafter Wijntjes '573). The Examiner's rejection is traversed for the following reasons.

The present invention is directed to a method of adjusting a fixed mirror of a double beam interferometer and interferometric spectrophotometer. The method is specifically effective in rough adjustment of an interferometer, an adjustment restoring the interference state of the two beams in the interferometer into a range allowing common controls to control the interferometer. This ability to perform rough adjustment means that the angle of the fixed mirror is adjustable from a state where the laser light beams do not interfere at all to a state where an intensity of interference of the laser light beams becomes maximum or the laser light beams become in an arbitrary interference state.

The Examiner states that Wijntjes '573 discloses a method of adjusting a fixed mirror of a double-beam interferometer including a control interferometer, comprising: detecting a laser interference light beam from the control interferometer (Col 4 lines 39-

44); adjusting an angle of the fixed mirror with respect to a laser light beam axis so that the intensity of interference of the laser light beams becomes maximum or the laser light beams become in an arbitrary interference state (Col 5 lines 49-54). The Examiner further states that Wijntjes '573 does not expressly state that during the initial adjustment the laser light beams do not interfere at all, but that it would have been obvious to a person of ordinary skill in the art to make an adjustment of the fixed mirror from a state where the laser light beams do not interfere at all.

Wijntjes '253 discloses a detector array used to obtain phase detection at various points throughout the cross section of the laser beam leaving an interferometer. Individual measurements are compared with an average of the phase measurements obtained to generate correction signals to obtain precise mirror alignment. A triad of piezoelectric elements that longitudinally respond to applied voltage are used to mount the fixed mirror in the interferometer. The corrective signals obtained through phase comparison of the cross section of the exiting laser beam are applied to the piezoelectric elements to obtain bidirectional correction of mirror alignment.

Although it may be obvious to adjust an interferometer from a state where laser light beams do not interfere, to one where interference occurs, it is not obvious to perform this adjustment in the way claimed by applicant. The prior art, including Wijntjes '253 teaches only a method of fine adjustment, at a distance of a reference signal of the control interferometer in the wavelength range of the laser source. Rough adjustment is not taught using a method where an interference light beam is detected from the control interferometer. There is no suggestion of use of any method, except known manual methods that require extensive time and experience. Thus, applicant's method of performing rough adjustment is not taught by Wijntjes '253 and is not obvious

in light of the teachings of Wijntjes '253. Reconsideration of the rejections of claim 1 is requested.

With respect to claim 4, a spectrometer is claimed that includes an adjusting mechanism for making rough adjustments to an angle of the fixed mirror with respect to a laser light beam axis in a range from a state where laser light beams do not interfere at all and fine adjustment of the interferometer is ineffective to a state where an intensity of interference of the laser light beams becomes maximum or the laser light beams become in an arbitrary interference state and fine adjustment of the interferometer is effective. The mechanism allows restoration of an adjustment restoring the interference state of the two beams in the interferometer into a range allowing common controls to control the interferometer.

As previously stated, Wijntjes does not teach rough adjustment where an interference light beam is detected from the control interferometer. There is no suggestion of use of any method or apparatus, except known manual methods that require extensive time and experience. Thus, applicant's spectrometer including a mechanism performing rough adjustment is not taught by Wijntjes '253 and is not obvious in light of the teachings of Wijntjes '253. Reconsideration of claim 4 is requested.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. NGB-14886.

Respectfully submitted,

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